

REMARKS

Examiner Pezzlo is thanked for withdrawing the finality of the previous rejections of Claims 15-24.

Claims 15-24 are currently pending in this application, with Claims 15 and 21 being the only independent claims.

Independent Claims 15 and 21 are directed to a hydraulic vehicle brake system comprising a hydraulic pressure generating device, an auxiliary hydraulic pressure source, a hydraulic pressure generating device, an output hydraulic pressure detecting means, a vehicle condition detecting means, a driving condition setting means, and a driving control means. The hydraulic pressure generating device pressurizes brake fluid supplied from a reservoir and applies brake pressure to a wheel cylinder in response to operation of a brake operating member. The auxiliary hydraulic pressure source comprises an accumulator, a hydraulic pump, and an electric motor which drives the pump to generate power hydraulic pressure. The hydraulic pressure generating device comprises a master cylinder and a hydraulic booster, the latter of which assists operation of the master cylinder. The output hydraulic pressure detecting means continuously detects the output hydraulic pressure of the accumulator and the vehicle condition detecting means continuously detects an operation of the vehicle, with the driving condition setting means setting the driving condition of the hydraulic pump based on the operating condition of the vehicle detected by the vehicle condition detecting means. The driving control means controls the electric motor to set different driving duties of the electric motor which drive the hydraulic pump based on the driving condition of the hydraulic pump

set by the driving condition setting means and the output hydraulic pressure of the accumulator of the auxiliary hydraulic pressure source.

The Official Action rejects Claims 15 and 21 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,850,655 to *Takata et al.* in view of U.S. Patent No. 6,402,265 to *Hachtel*.

Takata et al. discloses a hydraulic booster having an auxiliary hydraulic booster that delivers hydraulic pressure to a power piston 1 to boost the output of the piston. The booster includes a power piston 1, a boost chamber 5 for applying a boost pressure to the power piston 1, an input rod 3 and an intermediate inlet chamber 6 into which is introduced a power source pressure. The auxiliary pressure is generated by a pump 11 which draws hydraulic fluid from a reservoir 12 and delivers the hydraulic fluid to a pressurized accumulator 13. Upon actuation of the hydraulic booster, the pressurized hydraulic fluid transmits pressure to the boost chamber 5, thereby boosting the pressure output of the power piston 1.

The Official Action notes that *Takata et al.* lacks disclosure of a number of features recited in Claims 15 and 21, including an output hydraulic pressure detecting means, a vehicle condition detecting means, a driving condition setting means and a driving control means that controls the electric motor to set different driving duties of the electric motor which drive the hydraulic pump based on the driving condition of the hydraulic pump set by the driving condition setting means based on the driving condition of the vehicle. The Official Action takes the position that these absent features are disclosed in *Hachtel* and that it would have been obvious to include such features in the system disclosed in *Takata et al.*

Hachtel discloses a braking system having a master cylinder 110 for simulating a piston stroke and a pressure generating device that provides hydraulic braking pressure directly to the wheel cylinders 151-154 independent of the master cylinder 110. During operation, the safety valve 120 between the master cylinder 110 and the wheel cylinders is closed to prevent the master cylinder 110 from applying pressure to the wheel cylinders 151-154. The master cylinder 110 operates with a pedal travel simulator 125, a pedal travel sensor 118 and a pressure sensor 130. A control device 300 calculates the optimum wheel cylinder pressure (i.e. setpoint braking pressure) based on the signals corresponding to the driver's commands (i.e. the driver's actuation of the brake pedal 100, the detected pedal travel, the pressure in the master cylinder 110, and perhaps vehicle speed). When the setpoint braking pressure nears the accumulator pressure, the control device 300 turns on the electric motor 195 until the pump 190 adequately raises the accumulator pressure. Once the accumulator 185 reaches a pressure adequately higher than the set point pressure, the electric motor 195 is turned off. The control device 300 also operates the valves 161-164 and 141-144 to deliver the accumulator setpoint braking pressure to the wheel cylinders 151-154.

Hachtel does not disclose a driving control means for setting different driving duties of the electric motor which drive the hydraulic pump, or that the driving condition of the hydraulic pump is set by a driving condition setting means based on the operating condition of the vehicle as recited together with the other features in Claims 15 and 21. *Hachtel* discloses either turning the electric motor on or off. Further, *Hachtel* discloses that the on/off condition of the electric motor is based on the difference between the set point pressure and the accumulator pressure.

In the event the undersigned has not fully understood or appreciated the relevant portion of the disclosure in *Hachtel* relied upon in the Official Action, the Examiner is kindly asked to provide a detailed discussion on this point to facilitate the undersigned's understanding.

For at least the reasons stated above, independent Claims 15 and 21 are allowable. Also, dependent Claims 16-20 and 22-24 are allowable at least by virtue of their dependence upon allowable independent Claims 15 and 21. Thus, it is respectfully requested that all the rejections be withdrawn and that this application be allowed in a timely fashion.

Should any questions arise in connection with this application, or should the Examiner feel that a telephone conference with the undersigned would be helpful in resolving any matters relating to this application, the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: May 14, 2004

By: Matthew L. Schneider
Matthew L. Schneider
Registration No. 32,814

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620